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Synthesis, Characterization and *in vitro* Studies of Metal Complexes Derived from Isoxazole Schiff base

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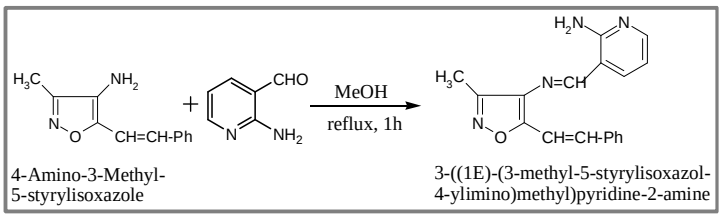
ABSTRACT

In the present study some new isoaxazole based Shciff base binary metal complexes were synthesized from Schiff base ligand ***3-((1E)-(3-methyl-5-styrylisoxazol-4-ylimino)methyl)pyridine-2-amine(L)*** *derived by condensation of 4-amino-3-methyl-5-styrylisoxazole with 2-aminepyridine-3-carbaldehyde. All the synthesized Schiff base ligand and metal complexes were well characterized by different physico and spectral techniques such as Elemental Analysis, Magnetic susceptibility, Thermo-gravimetric Analysis (TGA), Mass spectra,* ^{1}H *and* ^{13}C*NMR, IR, UV-Vis, EPR spectroscopy. The spectral studies revealed that* ***Co(II)*** *and* ***Cu(II)*** *complexes have octahedral geometry;* ***Zn(II)*** *complex has Tetrahedral structure where as* ***Pd(II)*** *complex shown square planar geometry. The Schiff base ligand and its corresponding metal complexes were further screened for their DNA binding activity and antimicrobial evaluation studies and in vitro cytotoxic activity.*

Graphical Abstract



Synthesis of Schiff base Ligand

Keywords: Isoxazole scaffold, Schiff base, Metal complexes, *in vitro* biological studies.